ATARI®

520ST™

COMPUTER SYSTEM

The Atari 520ST System represents a new concept in personal computing. Power, performance, and speed are matched by the system's price and ease of use.

The 520ST is the best looking, best feeling, best performing computer system available anywhere. Complete with a two-button mouse, 3.5 inch disk drive, high-resolution monochrome paper white monitor or dazzling RGB color monitor, TOS™ Operating System, GEM™ Desktop, plus ST Logo™ and BASIC, Atari delivers technical sophistication at a revolutionary price.

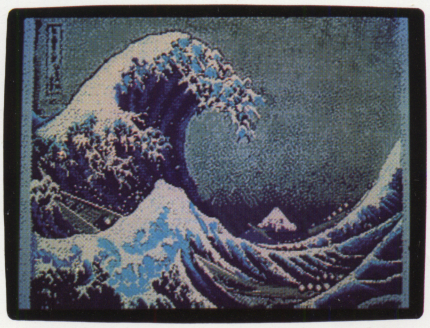
HARDWARE ARCHITECTURE

The design of the ST System represents a major advance in computer technology. At the heart of the 520ST is the 68000 microprocessor. This ultra-powerful 16-bit microprocessor uses a 32-bit internal architecture and runs at a full 8 MHz. Supporting the processor are four custom designed chips handling graphics, high-speed disk access, system timing, error detection, and memory control. For increased reliability, the 520ST custom chip set has been designed to replace 305 components. Along with the main microprocessor and the four custom chips are 512Kbytes of RAM, 192Kbytes of ROM, and a multi-voice sound chip.

The exterior design of the 520ST is an expression of its technology and ease of use. Its 95-key ergonomic keyboard is divided into four main areas: Main QWERTY typing area, ten programmable function keys, editing section with Help, Undo, Insert, Clear, and four cursor control keys, plus a numeric keypad for spreadsheet, accounting, and other number intensive projects.

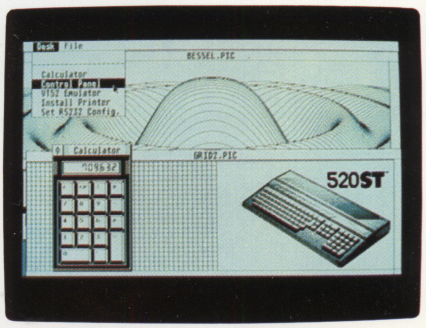
EXPANSION

An inherent part of the powerful 520ST is its expandability. The computer comes with an array of built-in ports. The left side houses a 128K ROM cartridge slot. The right side houses two joystick ports, one of which is used as the mouse port. The rear panel contains the power in, MIDI in, MIDI out, video, parallel printer, RS232 serial, floppy disk, and hard disk ports.



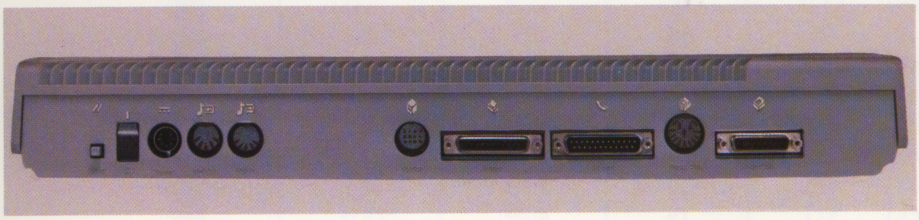
MIDI is a standard interface designed to allow synthesizers and other electronic musical instruments to communicate with each other. The MIDI ports open up a world of musical applications. Imagine a computerized music instructor that lets you know when you hit a wrong note and then works with you at your own speed. Also, with the ST System you can create a sophisticated computerized recording studio. Musical tracks can be recorded, edited, and then played back when they're perfect. MIDI can also be used as a local area network for 520ST's.

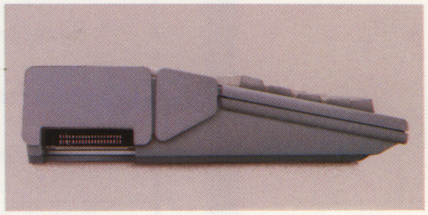
The ST's printer port supports an industry standard parallel interface. This connector is identical to those on many leading, higher-priced PC's. This means that your ST is compatible with a wide range of popular printers, including Atari's own.



Communication with other computer systems, data bases, and special function peripherals is supported by the RS232 port. To quickly put this interface to work, the 520ST includes a VT™-52 emulator package. With the VT™-52, the ST can function as a terminal on mainframe computers, a controller for serial devices, and a telecomputing port for remote data bases such as CompuServe™ and Dow Jones™.

THE ATARI 520ST COMPUTER SYSTEM



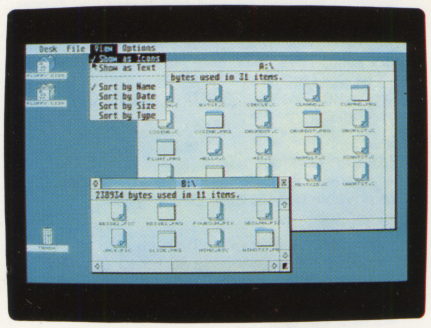


Disk drives and hard disks are easily accessible through a very high-speed DMA channel linked to both the floppy disk and hard disk ports. ST series 3.5 inch floppy disk drives provide a storage capacity of 360 kilobytes in the SF354™ drive or 720 kilobytes in the SF314™ drive. For larger applications, the ST's hard disk port supports a variety of hard disk drives with storage

capacities in excess of 10 megabytes, and transfers data at an incredible 1.33 megabytes per second.

SYSTEM SOFTWARE

Complementing the high performance hardware of the 520ST is a powerful, operating environment. Working with the computer is especially easy because of its user friendly GEM graphics interface. GEM, the Graphics Environment Manager designed by Digital Research, makes it effortless for a novice to do all the usual housekeeping chores, as well as calling up programs from a disk. In addition, GEM makes the job easier for the applications programmer. By using GEM, a programmer can write to the Virtual Device Interface rather than having to go directly to the hardware. Programs that are written to GEM will still work with future memory, color, or graphic enhancements to your system. And GEM's complete graphic tool kit makes it a snap for programmers to take full advantage of the system's capabilities without tedious coding.



Graphic images on the GEM Desktop represent such familiar office accessories as a waste basket, file cabinets, and files. To work with these objects, simply "point and click" the mouse. A pointer on the screen is controlled by moving the mouse. When the pointer gets to the item you want, just "click" the mouse button. It's that easy! GEM lets you move windows instantly, pull down menus, resize window images, change the color palette, install a variety of printers, copy files, and even "trash" them. Copying files with GEM is simply a matter of moving a file icon with your mouse from one disk directory window to another. A "touch" of simplicity.

APPLICATIONS SOFTWARE

The Atari 520ST personal computer is a system with unlimited potential. Whether you're a busy executive, a student, or a hobbyist, the ST can accomplish virtually anything you want a personal computer to do.

When you combine effortless mouse control, common sense graphic symbols, and on-screen menu directories, even the most detailed application software becomes a breeze to handle. For executives and college-level students there are word processors, spread sheets, business graphics, data base managers, and other productivity packages. School students can use computing languages and computer-aided instruction packages. There are also painting programs, drawing programs, and a multitude of entertainment programs. The Atari 520ST is truly the computer for everyone, with software for business, education, home applications, and entertainment.

SPECIFICATIONS

	ATARI™ 520 ST	IBM™ PCAT™	APPLE™ MACINTOSH™	COMMODORE™ AMIGA™
Price	$799	$4675	$2795	$1795
CPU	68000	80286	68000	68000
Speed MHz	8.0	6.0	7.83	7.16
Standard RAM	512K	256K	512K	256K
Number of Keys	95	95	59	89
Mouse	YES	NO	YES	YES
Screen Resolution	(NON-INTERLACED MODE)			
Color	640X200	640X200	NONE	640X200***
Monochrome	640X400	720X350**	512X342	640X200***
Color Output	YES	OPTIONAL	NONE	YES
Number of Colors	512	16	NONE	4096
Disk Drive	3.5"	5.25"	3.5"	3.5"
Built-in Hard Disk (DMA) Port	YES	YES	NO	NO
MIDI Interface	YES	NO	NO	NO
No. of Sound Voices	3	1	4	4

** WITH OPTIONAL MONOCHROME BOARD NON BIT-MAPPED
*** INTERLACE MODE - 640X400

ARCHITECTURE

Processor
CPU: Motorola 68000 running at 8 MHz
Bus: 16-bit external 32-bit internal 24-bit address
Registers: 8x32-bit data and address
Interrupts: 7 levels
Instructions: 56
Addressing modes: 14
Data types: 5
Real-time clock: standard

Memory
RAM: 512K
ROM: up to 192K
Cartridge: 128Kbytes external plug-in ROM (additional to internal ROM)

Storage
Floppy-Standard 3.5-inch floppy disk via DMA
Drive capacity: 360K or 720K (formatted)
Data transfer rate: 250K bits/s
Average access time: 96ms
Step time: 3ms track to track
2nd drive optional
Hard Disk-DMA interface built into 520ST
Data transfer rate: 1.33M bytes/s (continuous)

GRAPHICS / VIDEO

Bit Mapped
Full bit mapped display

Monochrome
640 x 400 pixels
Video: 1.0Vp.p, 75Ω
Sync: Separate, 5VDC, 3.3KΩ
Horizontal: 35.7 KHz
Vertical: 71.2 Hz

Color
640 x 200 pixels x 4 colors
320 x 200 pixels x 16 colors
Palette size: 512 colors
Video: R,G,B 1.0V p.p, 75Ω, linear
Sync: Separate, 5VDC, 3.3KΩ
Horizontal: 15.75 KHz
Vertical: 60 Hz

USER INTERFACE

Keyboard
Standard QWERTY typewriter format
Separate numeric keypad and cursor key cluster
Low profile, sculptured ergonomic design
Programmable auto repeat characteristics
Full travel keys with "feel" and audible feedback
95 keys/10 function keys
Keyboard processor (6301) to reduce CPU overhead

Mouse
2-button control
High precision, non-slip ball motion-sensor
Removable ball for easy cleaning

Sound
3 programmable sound channels
Frequency programmable 30 Hz to 125 KHz
Programmable volume
Dynamic envelope shaping
Wave shaping
Programmable attack, decay, sustain, release
Audio out: 1.0V peak to peak, 10KΩ
External audio in: 1.0V peak to peak, 10KΩ
VT52 terminal emulation 4A modem port

INPUT / OUTPUT PORTS

Printer
Industry Standard Parallel
25 pin D-type connector
Strobe/Busy support

Modem
RS232-C standard (DTE)
50 - 19,200 Baud
RTS/CTS/Signal Detect/DTR/RI
25 pin D type connector

MIDI (Musical Instrument Digital Interface)
2 ports: MIDI IN, MIDI OUT/THROUGH
31.25K Baud
Optically isolated receiver
5 pin din connectors

Joystick / Mouse
2 ports
Dedicated ATARI joystick port
Combination mouse/joystick port
9-pin D type connectors

OPERATING SYSTEM

TOS™ with GEM operating environment
Hierarchical filing with sub-directories and path names
User interface via GEM, with self-explanatory command functions
Icons
Multi-windowing
Window re-sizing/re-positioning/erasing
Drop-down menus (selected by mouse)
GEM virtual device interface

STANDARD SOFTWARE

TOS™ operating system
GEM Desktop
ST BASIC interpreter/language system
ST LOGO interpreter/language system
VT52 terminal emulation via modem port
Control panel for system customization
RS232 configuration control
Printer configuration control

PHYSICAL

System dimensions:
Minimum height 28mm, Maximum height 62mm,
Width 470mm
Depth 239mm
Power supply: External (regulated)
Low voltage power: +5V +/-5% 2A
+12V +/-10% 30mA -12V +/- 10% 30mA
Mains: 117VAC +/- 10% 60Hz

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